# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant      :      Andrew Szabo

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For      :      NUTRITIONAL OPTIMIZATION SYSTEM AND METHOD

Examiner      :      Samuel Rimell

Group:      2175

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Commissioner for Patents                                               August 21, 2006
P.O. Box 1450
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## APPLICANTS APPEAL BRIEF UNDER 37 C.F.R. §41.37(c)

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

SIR:

In response to the Office Action dated January 6, 2004, a Notice of Appeal and Petition for Extension of Time having been filed on May 6, 2004, and further in response to the Communication dated October 7, 2004, and further in response to the Order Returning Undocketed Appeal to Examiner dated July 20, 2006, Applicant herewith provides its Appeal Brief:

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## APPLICANTS APPEAL BRIEF UNDER 37 C.F.R. §41.37(c)

(c)(1)(i)      **<u>REAL PARTY IN INTEREST</u>**

      The real party in interest is the assignee of the patent application, Smeaton Pump LLC.

(c)(1)(ii)     **<u>RELATED APPEALS AND INTERFERENCES</u>**


     None.

(c)(1)(iii)      **<u>STATUS OF CLAIMS</u>**

All pending claims, 29-33, 35-50, 52-74, have been finally rejected.

The rejection of claims 29-33, 35-50, 52-74 is appealed.

(c)(1)(iv)    **STATUS OF AMENDMENTS**


Amendments dated May 6, 2004, canceling claim 51, is to be entered on filing of appeal, per Advisory Action June 4, 2004.

(c)(1)(v)     **SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention relates to a system and method for presentation of records from an electronic database by jointly optimizing the presentation based on economic parameters and a statistical risk. The application therefore provides an automated joint or multifactorial analysis of both cost, and risk, with respect to a set of records selected from a database or class of information.

Thus, the output represent a user search is dependent on the query itself, a risk factor, such as the risk that the user is seeking something different, as well as an economic factor, such as a third party compensation or promotion fee. Because of the joint optimization, it would be difficult, for example, for a purely economic incentive to produce an irrelevant result, or one having a low probability of acceptance by the user from ranking high.

(A)     **INDEPENDENT CLAIMS**

Claim 29 provides a method for presenting records to a user, comprising the steps of receiving an input from the user (page 11, line 17-23); defining a subset of records selected from an electronic database containing a set of records (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12), based on a classification of information within a respective record and the user input (page 11, line 22-page 12, line 2); determining a statistical risk associated with a respective record (page 3, lines 2-7; page 7, lines 8-10; page 16, lines 1-13; page 28, lines 3-7); determining economic parameters associated with the subset of records (page 3, lines 7 and 13, page 4, line 17-23); and presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2). Claim 42 is grouped with claim 29.

Claim 44, provides a method for presenting records to a user, comprising the steps of determining a user relevance parameter (page 3, lines 2-7, page 11, line 17-23); defining a set of records from an electronic database based on a classification of the information therewithin (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12) and the user relevance parameter (page 11, line 22-page 12, line 2); determining a statistical risk relating to the set of records and the determined user relevance parameter (page 3, lines 2-7; page 7, lines 8-

10; page 16, lines 1-13; page 28, lines 3-7); determining economic parameters for defined records (page 3, lines 7 and 13, page 4, line 17-23); and presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2).

Claim 59 provides a method for outputting a set of records, comprising the steps of receiving a specification for a class of information having a plurality of records (page 11, line 17-23), said plurality of records having associated economic parameters (page 3, lines 7 and 13, page 4, line 17-23); determining a statistical risk associated with records within the class of information and the received specification (page 3, lines 2-7; page 7, lines 8-10; page 16, lines 1-13; page 28, lines 3-7); and automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2).

Claim 67 provides a method of producing a menu of selections (page 11, lines 19-23, page 23, line 22-page 23, line 8), comprising the steps of receiving an inquiry from the user; calculating a set of selections from a database responsive to the inquiry (page 20, line 22-page 21, line 8; page 26, lines 14-19; page 27, lines 1-12), each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter (page 3, lines 7 and 13, page 4, line 17-23); and automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk (page 4, lines 17-23, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 16, lines 19-20, page 30, lines 20-2) with respect to a likelihood of user adoption of a selection (page 4, line 17-page 5, line 2, page 7, lines 4-13, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 14, lines 9-12, page 16, line 22-page 17, line 7, page 19, lines 10-19, page 21, line 22-page 23, line 8, page 22 line 22-page 23, line 8).

(B)     **DEPENDENT CLAIMS SEPARATELY ARGUED**

Claims 30 and 45 define the user input as health information, which is a narrow set of information.  (Page 12, line 21-page 13, line 20, line 22-page 21, line 1, page 26, line 17), page 27, lines 1-6).

Claim 31 further defines the user input a comprising a risk tolerance. (Page 21, lines 22-23, page 28, lines 3-5)

Claim 32 provides a method in which a user interface is provided to assist the user in making selections.  (Page 11, lines 17-20, page 22, line 22-page 23, line 8).

Claims 33, 48 and 69 define the economic parameters as corresponding to a cost associated with a respective selected record.  (Page 4, lines 17-22)

Claims 35 and 68 define the input as a semantic expression.  (Page 17, lines 13-15)

Claim 36 provides the further step of determining a user preference and further optimizing the presented set of records based on the determined user preference.  (Page 12, lines 13-17, page 23, lines 2-4).

Claims 37 and 52 provides the further steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records.  (Page 13, line 21-page 14, line 8).

Claims 38, 53 and 61 provide the further steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.  (Page 3, lines 17-22, page 27, line 17-page 28, line 11).

Claims 39, 54 and 63 provide the further step of transacting a sale relating to a subject of at least one presented set of records with the person.  (Page 10, lie 22-page 11, line 7, page 19, line 20-page 20, line 9, page 29, lines 6-12, page 31, lines 5-9).

Claims 40 and 55 defines the sale of claims 39 and 54 as being conducted by an electronic data transmission between a client system and a server system.  (Page 12, line 5, page 23, line 20, page 26, lines 2-13).

Claims 41 and 56 further define the electronic data transmission between the client system and the server system of claims 40 and 54 as being carried over the Internet.  (Page 7, line 19, page 12, line 1, page 20, line 5, page 21, line 6, page 23, line 21, page 26, line 11).

Claims 43, 58 and 66 further comprise the steps of generating a graphic user interface and interacting with the user through the graphic user interface. (Page 11, lines 18-20, page 22, line 22-page 23, line 8).

Claim 46 defines the user relevance parameter of claim 44 as an input to a search engine. (Page 11, line 22-page 23, line 3, page 21, lines 6-8).

Claim 47 provides that the records comprise information accessible through the Internet. . (Page 7, line 19, page 12, line 1, page 20, line 5, page 21, line 6, page 23, line 21, page 26, line 11).

Claim 49 further defines the method of claim 44 by requiring the presenting step to output a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk. (Page 23, line 20-page 24, page 28, lines 3-11).

Claim 50 provides that the user relevance parameter to comprises a population grouping. (Page 4, lines 1-16).

Claims 53 and 61 further comprise the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user. (Page 3, lines 17-22, page 27, line 17-page 28, line 11)

Claim 60 provides that the records to be presented in the form of a proposal, and the optimization to emphasize a likelihood of adoption of the proposal by a user. (page 4, line 17-page 5, line 2, page 7, lines 4-13, page 8, lines 9-23, page 12, lines 13-17, page 13, lines 13-20, page 14, lines 9-12, page 16, line 22-page 17, line 7, page 19, lines 10-19, page 21, line 22-page 23, line 8, page 22 line 22-page 23, line 8).

Claim 62 further comprises the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance. (Page 28, lines 3-11).

Claim 64 further comprises the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network. (Page 11, lines 17-20, Page 12, line 5, line 20-page 24, line 1, page 22, line 22-page 23, line 8, page 23, line 20, page 26, lines 2-13).

Claim 70 provides that the presentation gives preference to relevant and economically feasible results. (Page 8, lines 9-23, page 16, lines 4-13).

Claim 71 provides that the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party. (Page 4, lines 17-23, page 13, lines 3-12, page 16, lines 14-21).

Claim 72 provides that the automatic optimization merges results from a set of independent modules. (Page 16, line 22-page 17, line19).

Claim 73 provides that the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user. (Page 28, lines 3-11).

Claim 74 provides that the economic parameters correspond to an economic interest of an entity distinct from the user. (Page 4, lines 17-23, page 13, lines 3-12, page 16, lines 14-21).

Claims 42 and 57 provide a computer readable medium. (Page 12, lines 4-5, page 32, line 7

(c)(1)(vi)  **GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**


1.     Whether claims 60 and 67-73 are properly rejected under 35 U.C.S. § 112, first paragraph, as failing to be supported by an enabling specification.


2.     Whether claims 29-33, 35-50, 52-59, 61-66 and 74 are properly rejected under 35 U.C.S. § 102(e) as being anticipated by Mayaud (U.S. Patent 5,584,255).

(A)     **SEPARATE ARGUMENTS FOR PATENTABILITY OF CLAIMS**

Pursuant to 37 C.F.R. 43.37(c)(1)(vii), applicants elect to argue separate patentability for the rejected claims of the application, which therefore do <u>not</u> stand or fall together. Applicants request that the claims be grouped as follows, with each group set forth below examined on its own merits, based on the reasoned statements why the claims of the group are separately patentable.

(i)     <u>Distinctions Between Independent Claims 29, 44, 59 and 67:</u>

Independent claims 29, 44, 59, and 67 do not stand or fall together because they have material differences in scope. Because each independent claim is separately argued, their respective dependent claims (even if the dependent claims themselves have corresponding similar limitations), therefore fall into different groups which must be separately considered.

Claim 29 is a method for presenting records to a user, comprising the steps of receiving an input from the user; defining a subset of records selected from an electronic database containing a set of records, based on a classification of information within a respective record and the user input; determining a statistical risk associated with a respective record; determining economic parameters associated with the subset of records; and presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.

Claim 44, while also a method for presenting records to a user, comprises the steps of determining a user relevance parameter; defining a set of records from an electronic database based on a classification of the information therewithin and the user relevance parameter; determining a statistical risk relating to the set of records and the determined user relevance parameter; determining economic parameters for defined records; and presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk. This differs from claim 29, in that a user relevance parameter is determined, as compared to simply receiving an input, which is used for selecting records. A statistical risk is determined for both the set of records and the user relevance parameter. Claim 57 is grouped with claim 44.

Claim 59 provides a method for outputting a set of records, comprising the steps of receiving a specification for a class of information having a plurality of records, said plurality of records having associated economic parameters; determining a statistical risk associated with records within the class of information and the received specification; and automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk. This differs from claim 44 in that it does not employ a user relevance parameter, and differs from both claims 29 and 44 in that the records need not be in an electronic database, and that the set definition is not necessarily based on a classification of information within a record, but rather is a specification of a class of information having a plurality of records, a subtle but potentially meaningful distinction. Claim 59 differs from claim 29 in that a statistical risk is associated with both records in the class and the received specification. Claim 65 is grouped with claim 59.

Claim 67 provides a method of producing a menu of selections, comprising the steps of receiving an inquiry from the user; calculating a set of selections from a database responsive to the inquiry, each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter; and automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection. Claim 67 differs from claims 29, 44 and 59 in that claim 67 produces a menu of selections, the set of selections is not necessarily dependent on a classification of information within a record, and the presentation is "economically efficient", based on the economic parameter and the risk with respect to a likelihood of adoption of a selection.

Thus, the independent claims 29, 44, 59, and 67 are materially different, and include separate elements and distinctions from the prior art, which require independent and distinct consideration. Each of these independent claims is therefore patentable on different bases.


Claims 29, 32 and 42

Claim 29 is a method for presenting records to a user, comprising the steps of receiving an input from the user; defining a subset of records selected from an electronic database containing a set of records, based on a classification of information within a respective record and the user input; determining a statistical risk associated with a respective record; determining

economic parameters associated with the subset of records; and presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record. Claims 32 and 42 are grouped with claim 29.

Claims 44, 46 and 57

Claim 44, while also a method for presenting records to a user, comprises the steps of determining a user relevance parameter; defining a set of records from an electronic database based on a classification of the information therewithin and the user relevance parameter; determining a statistical risk relating to the set of records and the determined user relevance parameter; determining economic parameters for defined records; and presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk. This differs from claim 29, in that a user relevance parameter is determined, as compared to simply receiving an input, which is used for selecting records. A statistical risk is determined for both the set of records and the user relevance parameter. Claims 46 and 57 are grouped with claim 44.

Claims 59, 64 and 65

Claim 59 provides a method for outputting a set of records, comprising the steps of receiving a specification for a class of information having a plurality of records, said plurality of records having associated economic parameters; determining a statistical risk associated with records within the class of information and the received specification; and automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk. This differs from claim 44 in that it does not employ a user relevance parameter, and differs from both claims 29 and 44 in that the records need not be in an electronic database, and that the set definition is not necessarily based on a classification of information within a record, but rather is a specification of a class of information having a plurality of records, a subtle but potentially meaningful distinction. Claim 59 differs from claim 29 in that a statistical risk is associated with both records in the class and the received specification. Claims 64 and 65 are grouped with claim 59.

<u>Claim 67</u>

Claim 67 provides a method of producing a menu of selections, comprising the steps of receiving an inquiry from the user; calculating a set of selections from a database responsive to the inquiry, each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter; and automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection. Claim 67 differs from claims 29, 44 and 59 in that claim 67 produces a menu of selections, the set of selections is not necessarily dependent on a classification of information within a record, and the presentation is "economically efficient", based on the economic parameter and the risk with respect to a likelihood of adoption of a selection.

Thus, the independent claims represent distinct groups which must be examined and considered separately.

(ii)    Dependent Claims

Claim 30; Claim 45

Claims 30 and 45 define the user input as health information, which is a narrow set of information. Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 30 and 45 should be separately considered.

Claim 31

Claim 31 further defines the user input a comprising a risk tolerance, which is a subjective factor. Claim 31 should therefore be considered separately from claim 29.

Claim 33; Claim 48; Claim 69

Claims 33, 48 and 69 define the economic parameters as corresponding to a cost associated with a respective selected record, which constrains the type of information which can be considered the economic parameters. Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 33, 48 and 69 should be separately considered.

Claim 35; Claim 68

Claims 35 and 68 define the input as a semantic expression, which distinguishes other types of inputs, such as purely quantitative data. Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 35 and 68 should be separately considered.

Claim 36

Claim 36 provides the further step of determining a user preference and further optimizing the presented set of records based on the determined user preference. Claim 36 should therefore be separately considered from claim 29.

Claim 37; Claim 52

Claims 37 and 52 provides the further steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a

revised presented set of records.  This represents a substantial addition to the base claims.  Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 37 and 52 should be separately considered.

Claim 38; Claim 53; Claim 61

Claim 38, 53 and 61 provide the further steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.  Thus, an "optimum" is depending on a selection of conditions.  Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 38, 53 and 61 should be separately considered.

Claim 39; Claim 54; Claim 63

Claims 39, 54 and 63 provide the further step of transacting a sale relating to a subject of at least one presented set of records with the person.  This adds a material new consideration to the claims.  Since each of these is respectively different from its base claim, and the base claims are respectively different, claims 39, 54 and 63 should be separately considered.

Claim 40; Claim 55

Claims 40 and 55 defines the sale of claims 39 and 54 as being conducted by an electronic data transmission between a client system and a server system.  Since each of these is respectively different from its base claim and respective independent base claim, and the base claims are respectively different, claims 40 and 55 should be separately considered.

Claim 41; Claim 56

Claims 41 and 56 further define the electronic data transmission between the client system and the server system of claims 40 and 54 as being carried over the Internet.  Since each of these is respectively different from its base claim and respective independent base claim, and the base claims are respectively different, claims 41 and 56 should be separately considered.

Claim 43; Claim 58; Claim 66

Claims 43, 58 and 66 further comprise the steps of generating a graphic user interface and interacting with the user through the graphic user interface. Since each of these distinguishes is respectively different from its base claim, and the base claims are respectively different, claims 43, 58 and 66 should be separately considered.

Claim 47

Claim 47 provides that the records comprise information accessible through the Internet. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 47 should be independently considered.

Claim 49

Claim 49 further defines the method of claim 44 by requiring the presenting step to output a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 49 should be independently considered.

Claim 50

Claim 50 provides that the user relevance parameter to comprises a population grouping. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 50 should be independently considered.

Claim 60

Claim 60 provides that the records to be presented in the form of a proposal, and the optimization to emphasize a likelihood of adoption of the proposal by a user. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 60 should be independently considered.

Claim 62

Claim 62 further comprises the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance. This limitation is not suggested by the

references, and distinguishes the base claim, and therefore claim 62 should be independently considered.

Claim 70

Claim 70 provides that the presentation gives preference to relevant and economically feasible results. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 70 should be independently considered.

Claim 71

Claim 71 provides that the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 71 should be independently considered.

Claim 72

Claim 72 provides that the automatic optimization merges results from a set of independent modules. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 72 should be independently considered.

Claim 73

Claim 73 provides that the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 73 should be independently considered.

Claim 74

Claim 74 provides that the economic parameters correspond to an economic interest of an entity distinct from the user. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 74 should be independently considered.

Therefore, except as expressly set forth above, each of the claims raises issues which require distinct analysis and consideration, and should be treated as separate groups. That is, each of the claims is to be grouped and considered independently on its own merits, with the exception of claims 29, 32 and 42; claims 44, 46 and 57; and claims 59, 64 and 65.

(c)(1)(vii)(B) **ARGUMENT ON THE MERITS**

      (i)      **FORMAL REJECTION**

Claims 60 and 67-73 are rejected as failing to comply with the enablement requirement of 35 U.S.C. § 112, and for including alleged new matter.

Claim 60 is rejected because the original disclosure allegedly "does not state that the 'likelihood of adoption' is part of the optimization process, or is a variable in the optimization process."

Applicant respectfully disagrees. The specification (Page 19, lines 10-19) clearly states:

> The proposal need not be limited to nutritional supplements, and therefore changes in diet, activity or exercise may also be included in the proposals. It is noted that great changes in diet, activity and exercise are difficult to effect, and therefore such proposals may be of limited benefit. In fact, since non-compliance rates are expected to be high, an optimization based on a proposal requiring distinct efforts is **likely to be rejected or ignored**. On the other hand, simple changes in diet, which are **likely to be adopted**, may be very efficacious. Thus, on a pragmatic basis, the proposal preferably emphasizes small dietary changes and a regimen of pills and/or supplements, even where an equivalent change might be possible through dietary modification.
>       *      *      *
> On one hand, a Japanese user would likely find comfort in a traditional Japanese health model, which in western medicine is considered "alternate". On the other hand, an American medical practitioner using the nutritional supplement optimization system is **unlikely to adopt** substantial contributions from alternative medicine sources.
>       *      *      *
> At least one health model is provided which determines an **optimum change** in nutritional and health status for the user **based on acceptable changes in diet or lifestyle**. Included in these changes are nutritional supplements. This model comprises a large set of formulae which represent a health status of the user, as well as models of change in health status. Each health model includes efficacy modeling for a set of nutritional supplements, as well as interaction modeling for diet, nutritional supplements, pharmaceuticals, and other factors. Thus, in this case, the health, efficacy and interaction models are unified into a single model. The user must select a health model 27 from the available choices, or may optionally hybridize existing compatible models.
>       *      *      *
> In generating the proposed nutritional supplementation 29, it is noted that the various models may have global minima or maxima and local minima or maxima, and therefore known searching algorithms may be employed to select a preferred "operating point", i.e., to optimize the proposal. Further, it is also noted that full compliance is rarely obtained, so that the models or **the health optimization model may precompensate for an expected degree of non-compliance**. This expected degree of non-compliance may be estimated, or based on subjective data or retrospective compliance data.

These passages clearly support applicant's contention that the optimization is sensitive to a likelihood of adoption, which is the inverse of a likelihood of rejection. In contrast to the analysis of the Examiner, the statement "Thus … the proposal preferably emphasizes ….", following a discussion of a likelihood of adoption must be in interpreted as a disclosure that the proposal is formulated based on that consideration, and thus is a variable in the calculation.

It is therefore respectfully submitted that the specification does indeed state that the optimization is one which produces a result which is "likely to be adopted", and that this is a criterion of the optimization, and further that the optimization seeks to avoid proposals which a user is "unlikely to adopt."

In support of this interpretation, applicant quotes other portions of the specification, although the Board is encouraged to review the specification as a whole:

> The present system provides an individually tailored proposal for nutritional supplementation or modification of intake. Being a proposal, and given the nature of mandates of dietary intake, the proposal may be accepted or rejected by the individual. Therefore, another embodiment of the invention involves an interactive process for arriving at a proposal, as well as a correction of optimization based on a deviation from a proposal. In this case, the cost optimization and risk analysis potentially play an important roles in a statistical analysis to arrive at a proposal. Since it would be expected that, except in the case of total parenteral nutrition, no absolute dietary schedule will be maintained, and further that it is primarily those individuals whose diets are most aberrant initially who are recalcitrant to change, the optimization proposal must include leeway for deviations. (Page 7, lines 4-13).

> Therefore, one embodiment of the invention provides an immediate feedback of a proposed nutritional supplementation based on an actual present status of a person, including recent meals and nutritional supplements, activity, health status and prospective events. This optimization may be provided through a hand held, pocket or bracelet (watch-type) device, personal computer, personal digital assistant (PDA), as a device which might be attached to or integral with a shopping cart, terminal to an on-line service, through the Internet (e.g., through a server or as a Java application), telephone with voice communication, kiosk, or centralized computer system. Therefore, a full featured system may be used to define an optimization, which may then be used to download an optimization to a portable or remote device. The programmed optimization may then be used to help keep the person "on track", and to report on an actual pattern of activity, diet and nutritional supplementation. While the portable or remote device may alter or reselect optimization continuously or often, preferably the optimization is performed infrequently, such as once per month. (Page 7, line 14-page 8, line 3)

> A preferred embodiment includes an economic optimization because, without this factor playing an explicit role, the "more is better" theory may produce a proposal which is untenable. Known systems which attempt to optimize nutrition perform economic

optimization in one of two ways. First, the public health model selects cost levels designed to do the most good for the most people. Some persons will receive a suboptimal dose, while others will receive little incremental benefit or even suffer toxic effects. Further, some persons will be asked to spend more than a reasonable amount, while others will have excess disposable funds without guidance as to how these funds should best be employed. Thus, the public health model does not account for an individual and his own specific factors, including budget. Second, an incomplete or limited economic analysis may be performed without the benefit of a linked health model. For example, an individual who visits a health food store and selects supplements performs a limited economic model, e.g., "that costs too much", in the selection of items for purchase. By linking the economic model with an individual health model, the benefits of a personalized proposal **at acceptable cost** is obtained. Further, by allowing a statistical error in the actual diet as compared to the proposed diet, the optimization may produce a better "real-world" result.  (Page 8, lines 9-23).

The resulting nutritional supplements, intended to help a mammal reach the desired state, along with suggested changes in the existing diet, comprise the proposal. In appropriate circumstances, activity and exercise may also be aspects of the proposal. The individual, however, need not accept the proposal, and may thus interact with the system to modify the proposal in specific aspects. These changes act as constraints for a secondary modification of the proposal. For example, a selected health model may suggest 300 mg of ascorbic acid (vitamin C) per day, in three doses. However, the individual may prefer 750 mg per day in three doses. Thus, the proposal is then updated with 750 mg per day in three divided doses as a constraint. The entire health model must be recomputed based on this constraint. In recomputing the model, the system further determines whether this constraint implies that a different model is more appropriate for implementation. In order to resolve this issue, the individual may be queried to determine the reason for the preference. If appropriate, hybrid models may be employed. The nutritional supplement proposal may thus include timing and frequency of dosage of the nutritional supplementation.  (Page 9, lines 10-23).

In theory, an economic based model may result in a highly skewed proposal, with high doses of relatively cheap components and without any expensive components. However, often, temperance and variety are desired, and thus amounts of some nutritional supplements are limited and others added, even though these result in reduced benefits according to a strict scientific analysis. Thus, a perceived benefit of a nutritional supplement may be in excess of a rational analysis of the potential benefit based on a review of existing scientific data. Thus, a health model may include an analysis of a perceived benefit of a component, rather than necessarily a scientific analysis. Further, it is noted that, in accordance with the scientific method of analysis of nutritional supplementation, studies may fail to show a benefit, or produce contradictory findings, even for nutritional supplements of real value. For example, ginseng is believed by many to be beneficial, but many scientific studies have failed to reveal a health benefit. This does not mean, however, that the proposed benefit of a component is not real. Another limitation of scientific methods is that they emphasize dose-response relationships over balance. However, a perception of an individual may be that supplementation of smaller

amounts of many different components is preferable to megadoses of a small number of nutritional supplements. Another limitation of typical scientific studies is a difficulty in proving subtle long-term effects of small doses. (Page 10, lines 1-17).

Based on an estimation of the present status of the consumer, the system then seeks to propose specific changes and nutritional supplements, in accordance with the health theory, expressed preferences, and optionally within the constraints of the economic model, to maximize the expected benefit to the consumer. The consumer then interacts with the system to "tune" the proposal based on personal preferences. After acceptance, the consumer may then execute the proposal by purchasing the recommended supplements. As stated above, the purchase system may be linked to the terminal, in communication with the terminal, or completely separate. (Page 13, lines 13-20).

At least one health model is provided which determines an optimum change in nutritional and health status 13 for the user based on acceptable changes in diet or lifestyle. Included in these changes are nutritional supplements. This model comprises a large set of formulae which represent a health status of the user, as well as models of change in health status. Each health model includes efficacy modeling for a set of nutritional supplements, as well as interaction modeling for diet, nutritional supplements, pharmaceuticals, and other factors. Thus, in this case, the health, efficacy and interaction models are unified into a single model. The user must select a health model 27 from the available choices, or may optionally hybridize existing compatible models. (Page 27, line 17-page 28, line 2).

Finally, a health optimization model 28 is selected which modifies the health model output based on the concept of risk and benefit. Thus, a user indicates explicitly a subjective risk tolerance, while implicit determinations of objective acceptable risk are also determined. This model is statistical in nature, and seeks to alter the aggressiveness of the proposal based on the models. It is noted that the aggressiveness weighting relies on the underlying health model. If a user seeks moderate aggressiveness in nutritional supplementation, but not necessarily high risk, then a different health model is preferably adopted which proposes the desired regimen. Generally, it would be strongly suggested to users to avoid high risk or very aggressive models except under professional supervision. (Page 28, lines 3-11).

The Examiner also states that "automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection" as provided by claim 67, is not supported by the specification.  In fact, the specification clearly states:

The present invention provides an **optimization** of nutritional supplementation **based on models that allow prediction** of a change in health from an existing status, as a result of administration of a plurality of nutritional supplements.  Relevant to various embodiments of the invention are activity of each nutritional supplement, desired change

in status, toxicity and adverse effects of nutritional supplements, interactions between nutritional supplements and other factors, **cost and economics** of the nutritional supplementation, and risk, both positive and negative. (Page 3, lines 2-7).

**A preferred embodiment of the invention employs an economic optimization** of nutritional supplementation. Therefore, in addition to determining which nutritional supplements are appropriate, the cost of each component or the proposed nutritional supplementation as a whole is determined and **used to achieve the maximum health benefit for given economic factors, such as a budget**. Therefore, as a further aspect of this embodiment, the cost structure of combination supplements and quantity discounts are considered. In addition, third party health insurers or life insurers may provide payments, discounts or rebates for the proposed regimen. Where an economic model is not explicitly employed, a user may be presented with one or more proposals having differing nutritional supplement costs, which may then be selected by the user. (Page 4, line 17-Page 5, line 2).

The present system provides an individually tailored proposal for nutritional supplementation or modification of intake. Being a proposal, and given the nature of mandates of dietary intake, the proposal may be accepted or rejected by the individual. Therefore, another embodiment of the invention involves an interactive process for arriving at a proposal, as well as a correction of **optimization** based on a deviation from a proposal. **In this case, the cost optimization and risk analysis potentially play an important roles in a statistical analysis to arrive at a proposal.** Since it would be expected that, except in the case of total parenteral nutrition, no absolute dietary schedule will be maintained, and further that it is primarily those individuals whose diets are most aberrant initially who are recalcitrant to change, the optimization proposal must include leeway for deviations. (Page 7, lines 4-13).

A preferred embodiment includes an economic optimization because, without this factor playing an explicit role, the "more is better" theory may produce a proposal which is untenable. Known systems which attempt to optimize nutrition perform economic optimization in one of two ways. First, the public health model selects cost levels designed to do the most good for the most people. Some persons will receive a suboptimal dose, while others will receive little incremental benefit or even suffer toxic effects. Further, some persons will be asked to spend more than a reasonable amount, while others will have excess disposable funds without guidance as to how these funds should best be employed. Thus, the public health model does not account for an individual and his own specific factors, including budget. Second, an incomplete or limited economic analysis may be performed without the benefit of a linked health model. For example, an individual who visits a health food store and selects supplements performs a limited economic model, e.g., "that costs too much", in the selection of items for purchase. **By linking the economic model with an individual health model, the benefits of a personalized proposal at acceptable cost is obtained.** Further, by allowing a statistical error in the actual diet as compared to the proposed diet, the optimization may produce a better "real-world" result. (Page 8, lines 9-23).

**The system thus seeks to determine, based on a set of personal preferences and constraints, as well as a health model and optionally a personal economic optimization model, an optimal proposal for nutritional supplementation**. Public health concerns partially defer to individual health considerations. Further, absolute health mandates defer, within limits, to personal preferences and optionally cost tolerance. (Page 12, lines 13-17).

Based on an estimation of the present status of the consumer, the system then seeks to propose specific changes and nutritional supplements, **in accordance with the health theory, expressed preferences, and optionally within the constraints of the economic model, to maximize the expected benefit to the consumer**. The consumer then interacts with the system to "tune" the proposal based on personal preferences. After acceptance, the consumer may then execute the proposal by purchasing the recommended supplements. As stated above, the purchase system may be linked to the terminal, in communication with the terminal, or completely separate. (Page 13, lines 13-20).

These cited passages, among others, clearly support applicant's contention that the specification literally supports claims which require an automatic optimization, of an economically efficient presentation of selections, dependent on a joint analysis of economics and risk, with respect to a likelihood of adoption.

It is respectfully submitted that one of ordinary skill in the art would interpret the specification to clearly and unambiguously teach a system which "emphasizes a likelihood of adoption of the proposal by a user" (claim 60) or "automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection" (claim 67).

The specification includes an express discussion of the adverse results of making a proposal which is not likely to be adopted, the desirability of generating a proposal which is likely to be adopted, and providing feedback in accordance with the preferences of the user to assure that the proposal meets the user's preferences for adoption. Therefore, the Examiner's rejection should be reversed.

(c)(1)(vii)(B) **ARGUMENT ON THE MERITS**

(ii) **ART REJECTIONS**

Claims 29-33, 35-50, 52-59, 61-66 and 74 are rejected under 35 U.S.C. § 102(e) as being anticipated by Mayaud, US 5,845,255.


**I. THE EXAMINER HAS NOT MET HIS BURDEN OR PRESENTING A PRIMA FACIE CASE OF ANTICIPATION OF THE CLAIMS.**

It is the Examiner's burden to show anticipation of the claims. Only after the Examiner has presented a prima facie case, is Applicant required to overcome that rejection. The Examiner has ignored or dismissed without due consideration critical elements of the claims, and, in the process, has failed to present credible evidence that the reference supplies the required teachings. Applicant is not required to respond to every citation to the record by the Examiner, where the claim language is clear and the reference speaks (or fails to speak) for itself.

Applicant's silence with respect to a citation to a passage or figure of the reference therefore does not represent acquiesce to the Examiner's assertions and rejections. The burden remains on the Examiner to establish a prima facie rejection showing an enabling disclosure within the four corners of the reference of each and every element of the claims, and weigh counter-arguments and evidence, in order to maintain the rejection of the claims.

Grouped claims, representing common issues, are argued together, and thus separate arguments are not made for such claims.

In fact, Mayaud provides only a separate and independent output of allergy information, which is in no way jointly optimized with economic parameters, resulting from a joint analysis with an economic parameter, or provided in a presentation of records, presented in a manner based on both economic parameters and statistical risk. This allergy information, in fact, is not even integrated with the drug list, and remains a separate output.

The independent claims require, *inter alia*, the steps of:

Claim 29: (e) presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.

Claim 44: (d) presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk.

Claim 59: (c) automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk.

Claim 67: (c) automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection.

As a common feature, all require that the presentation of the records be optimized, based both on economic parameters and statistical risk, jointly optimized based on the economic parameters and the statistical risk, or a joint analysis of the economic parameter and risk with respect to a likelihood if user adoption.

These features are missing from Mayaud, which in relevant part, states:

> An allergies review can be conducted by checking system-stored **known allergies** of patient Mary Harrington against known pharmacokinetics and pharmacodynamics of the newly prescribed drug, entered in prescribing zone 44, for any of those allergies. **Mary Harrington's allergy information is preferably an adjunct to her patient record** and is downloaded to the user device from the host computer facility when Mary Harrington is selected from the patient selection screen of FIG. 2. **Drug allergenic proclivities are also downloaded from one or another remote database employing the host computer facility**, under supervision of the inventive prescription management system, but preferably at a later point in the procedure, such as when a particular drug is selected for posting to prescribing zone 44. (Col. 31, lines 50-63).

> Alternatively, the requisite information can be downloaded when the allergy review is conducted. Such allergy screening can alternatively be effected when a new drug is posted to Drug field 88. **Either way, a positive system finding, indicating a risk of allergic reaction to the newly selected drug can activate a visual indicator or warning**, for example, Allergies button 52 may blink and, if desired, an audible warning may sound alerting the physician to reconsider their selection. Alternatively, or additionally, an alert screen can tell the physician of an allergy if an attempt is made to prescribe an offending drug. Such alerts can be used to notify the physician of drug interactions, can provide adverse treatment warnings or can alert them to non-compliance with formulary recommendations, for example to the use of an unnecessarily expensive drug, and may be accompanied by suggestions for more appropriate alternative therapies. (Col. 31, line 64-Col. 32, line 13).

> **Equivalent procedures can alert to possible drug interactions and contraindications, referring to the patient's prescription history for possible active or recently expired prescriptions that may interact with a newly prescribed drug, and for other patient data relevant to the drug's behavior in that patient.** Alternatively, the such a review for possible undesired aspects of the drug's performance on the patient is made upon activating Send Rx button 80. (Col. 32, lines 14-21).

FIG. 19 is a flowchart shows the sequence following the entry of the patient's condition through the Condition field 64. The user then begins the process of deciding which drug to prescribe. The user may wish to access information possible formulary drugs by accessing Rx Info 60. If the user wishes to expand his scope of options, he may access a non-formulary list through Rx Other 122. **The user may then access the patient's allergy history through the Allergy button 52**. However, the user may choose to bypass either the formulary and non-formulary list and simply check for allergies. As all the option involve access through the System Scripts window 18, the user is not locked into a particular sequence of actions. However, regardless of the user's sequence of actions, the system itself always goes through a sequence to insure that the user will be aware of allergies and other pertinent information from the remote database 210 before a final prescription is generated. This concept is further expanded in FIG. 20 where there is a safeguard within the prescription database (Rx Info) shown to prevent the reprinting of expired prescription. (Col. 38, line 65-Col. 39, line 17).

According to Mayaud, a drug for which an allergy alert is triggered remains listed, and apparently the presentation is unaltered, except for that separate alert. Likewise, an "unnecessarily expensive drug" is also denominated by a simple warning. Clearly this separate consideration of cost and risk does not anticipate a joint or co-optimization thereof (as required by, e.g., step (e) of claim 29, step (d) of claim 44, step (c) of claim 59, and step (c) of claim 67), and leads to a materially different result. That is, Mayaud does not alter the presentation (e.g., selection or ranking) of responses due to any statistical risk, while a joint optimization would, for example, require some consideration of the interrelation of both factors in producing a result.

The final element of claim 29 requires: "presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record." There is simply no teaching or suggestion in Mayaud to conclude that the presentation of records is jointly optimized based on both economics and statistical risks. In the cited passage, the risk of allergic reaction (or other enumerated "risks") are provided as an alert separate and apart from the presentation of records. That is, even if a drug is contraindicated, and therefore non-optimal, it is still presented. Therefore, it is quite clear that there is simply no joint optimization disclosed in the reference, as required by claim 29.

Likewise, claim 44 requires: "presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk," and claim 59 requires: "automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk." Mayaud does not teach or suggest any

automatic optimization based on both economic factors and determined statistical risk, and indeed, it is not clear that Mayaud in any way determines any statistical risk.

Claim 67 requires: "automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection." This claim therefore involves a further aspect to the optimization, that the optimization be conducted with respect to a likelihood of user adoption, a factor not taught or suggested by the reference.

While Mayaud teaches consideration of drug cost, and a manually created formulary list, this appears to be independent of other analyses; that is, a set of drugs may be cost-ranked, but not automatically ranked according to a cost-risk or other hybrid analysis. Therefore, the optimization is not "joint".


Distinctions Between The Dependent Claims

The Examiner has also rejected the various dependent claims. Initially, it is noted that due to the distinctions addressed above with respect to the base claims, the dependent claims should all be deemed allowable.

Further, applicant notes that, beyond the deficiencies with respect to the independent claims, the Examiner has failed to establish a prima facie case for anticipation with respect to claims 36-38, 49, 52-53, and 61-62, and has misapplied the reference.


Claim 30; Claim 45

Claims 30 and 45 define the user input as health information, which is a narrow set of information. While Mayaud admittedly receives health information from some source, this health information is not used in the manner set forth in Claim 29, that is, to define "a set of records selected from an electronic database … based on a classification of information within a respective record and the [health information]." The record provided by Mayaud is a patient record, retrieved by presumably a patient identifier or treating physician identifier. There is no teaching or suggestion that the records are retrieved in a content-sensitive manner, and indeed, the issues of patient privacy weigh against a content-based search paradigm. Mayaud, Col. 9, lines 8-15.

Claim 31

Claim 31 further defines the user input a comprising a risk tolerance, which is a subjective factor. Mayaud does not teach or suggest that any user _input_ correspond to a "risk tolerance". The Examiner appears to analogize an _output_ of the system to the "risk", and therefore the reference is distinguished.


Claim 33; Claim 48; Claim 69

Claims 33, 48 and 69 define the economic parameters as corresponding to a cost associated with a respective selected record, which constrains the type of information which can be considered the economic parameters. Mayaud does disclose that the system may produce a user interface output which is influenced by formulary cost preferences. Any such preferences are provided by a person other than the physician, for example a prescription benefits management company. Mayaud, Col. 35, lines 44-50. However, there is no "joint optimization", as required by claim 29+33, "automatically optimized based on both ..." presentation as required by claims 44+48, nor "automatic optimization of an economically efficient presentation of selections dependent on a joint analysis" as required by claim 67+69. The output of Mayaud is limited to a ranking of drugs based on a single parameter, without joint or dual optimization of economic parameters or cost.


Claim 35; Claim 68

Claims 35 and 68 define the input as a semantic expression, which distinguishes other types of inputs, such as purely quantitative data. Mayaud is distinguished from the independent claims as noted above. Therefore, one must consider the abstract question of whether the invention of receiving as in input a semantic expression (i.e., non-parametric), as opposed to arbitrary data which might be scalar data would be patentable, where the input is used to define the set of records. Clearly, the art distinguishes between the two types of data, especially where an optimization is involved in the process as a whole.


Claim 36

Claim 36 requires that the optimized output be dependent on the user preference. This distinguishes the situation where the "user preference" is an input which selects a different set of

records, and thus does not alter an optimization of the same set of records. Likewise, in contrast to claims 37 and 52, the Mayaud reference does not disclose re-optimizing based on a user feedback input. Therefore, claim 36 is separately patentable.

### Claim 37; Claim 52

Claims 37 and 52 provides the further steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records. Mayaud, Col. 40, lines 1-19, describes a system in which the system responds to the physician by making a suggestion. However, both the initial optimization and the "re-optiming" both differ from the disclosure of Mayaud, since there is no automatic joint optimization or optimization based on both of two factors. In addition, according to the present invention, the set of records is defined prior to the optimization, while in Mayaud, the response of the system includes a possibly different set of records.

### Claim 38; Claim 53; Claim 61

Claim 38, 53 and 61 provide the further steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user. Thus, an "optimum" is depending on a selection of conditions. The passage in Mayaud, on Col. 39, lines 44-54, does not provide for any joint optimization, or possibly any optimization at all, and therefore is distinguished by each of claims 38, 53 and 61.

### Claim 39; Claim 54; Claim 63

Claims 39, 54 and 63 provide the further step of transacting a sale relating to a subject of at least one presented set of records with the person. This adds a material new consideration to the claims. The Examiner asserts that the transaction of a sale is inherent in the prescription process. However, the claims require that the sale be transacted with the user (person), and in the case of Mayaud, the sale is transacted with the patient, who is not the user.

### Claim 40; Claim 55

Claims 40 and 55 defines the sale of claims 39 and 54 as being conducted by an electronic data transmission between a client system and a server system. The prescription

according to Mayaud is a legal authorization by the physician as a predicate for a sale; the sale itself is a transaction between the pharmacy and the patient. The electronic communication of the prescription therefore is differentiated from the present claims.

### Claim 41; Claim 56

Claims 41 and 56 further define the electronic data transmission between the client system and the server system of claims 40 and 54 as being carried over the Internet. The chain of dependent claims is distinguished as stated above. In addition, the conduct of a sale over the Internet based on a jointly optimized or dual factor optimized subset of records (to paraphrase the entire claim scope) is a process which distinguishes the art in general.

### Claim 43; Claim 58; Claim 66

Claims 43, 58 and 66 further comprise the steps of generating a graphic user interface and interacting with the user through the graphic user interface. While graphic user interfaces (GUI) are well known for human-computer interfaces, such GUI serve to distinguish machine-to-machine interfaces, which typically are not defined as GUIs. Since the joint optimization or dual-factor optimization potentially leads to complex data, or a requirement for simplification of complex data, it is not clear that the prior art in general teaches that such this optimized data should be presented through a GUI to a user.

### Claim 47

Claim 47 provides that the records comprise information accessible through the Internet. This limitation is not suggested by the references, and distinguishes the base claim, and therefore claim 47 should be independently considered.

### Claim 49

Mayaud provides no teaching or suggestion of outputting a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk, as required by claim 49. Mayaud, Col. 40, lines 1-10 provide no teaching or suggestion that the order of drugs (or alternate drugs) be determined by the two enumerated factors.

## Claim 50

Claim 50 provides that the user relevance parameter to comprises a population grouping. Since Mayaud is distinguished based on claim 44, and the population grouping is considered in the art as a distinction from a generic "relevance parameter", claim 50 is considered independently patentable.

## Claim 60

Claim 60 provides that the records to be presented in the form of a proposal, and the optimization to emphasize a likelihood of adoption of the proposal by a user. While the system of Mayaud makes recommendations to the physician, there is no teaching or suggestion that there is any consideration of the subjective analysis of the information received by the physician. That is, the recommendations are made objectively, without regard for the likelihood of adoption by a user. Thus, claim 60 adds a limitation which is distinct.

## Claim 62

Mayaud provides no relevant teaching with respect to providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance, as required by claim 62. The rejection by the Examiner is not believed to point to any portion of Mayaud which provides a plurality of "relevance profiles" nor selecting any such relevance profile to define a risk tolerance. Claim 62 is therefore believed to be separately patentable.

## Claim 64

Claim 64 further comprises the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network. While, in general, client-server computing systems are known, and indeed Mayaud discloses clients 201 and a server 206, the present claim describes that the optimization is performed at the server, thus distinguishing Mayaud, which does not provide any automated analysis or optimization based on a "statistical risk". The Examiner infers, perhaps, that the doctor using the system may evaluate a risk of allergic reaction (this is not disclosed as a statistical process), but

this manual analysis would be performed at, or in conjunction with, the client terminal, not the server.

Claim 70

Claim 70 provides that the presentation gives preference to relevant and economically feasible results. This represents yet another level of optimization, and therefore further defines a distinction from Mayaud.

Claim 71

Claim 71 provides that the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party. This also represents another level of optimization, and therefore further defines a distinction from Mayaud.

Claim 72

Claim 72 provides that the automatic optimization merges results from a set of independent modules. The presentation of data as defined by Mayaud does not appear to merge data from different sources or "modules", and therefore claim 72 is further distinguished from the reference.

Claim 73

Claim 73 provides that the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user. Mayaud does not appear to determine an "objective statistically acceptable risk to the user", nor is any likelihood of user adoption derived therefrom. Therefore, claim 73 is distinguished from Mayaud.

Claim 74

Claim 74 provides that the economic parameters correspond to an economic interest of an entity distinct from the user. The preferred formulary of Mayaud appears to reflect an economic interest distinct from the user; however, there is no joint optimization disclosed in Mayaud, and therefore this reference is distinguished. In general, the prior art does not teach a joint

optimization of records based on a statistical risk associated with a record and an economic interest of an entity distinct from a user. Therefore, claim 74 should be independently considered.

Therefore, except as expressly set forth above, each of the claims raises issues which require distinct analysis and consideration, and should be treated as separate groups. That is, each of the claims is to be grouped and considered independently on its own merits, with the exception of claims 29, 32 and 42; claims 44, 46 and 57; and claims 59 and 65.

Therefore, except as expressly set forth above, each of the claims raises issues which require distinct analysis and consideration, and should be treated as separate groups. That is, each of the claims is to be grouped and considered independently on its own merits, with the exception of claims 29, 32 and 42; claims 44 and 57; and claims 59, 64 and 65.

## II.  DRUG ALLERGIES, AS DESCRIBED IN MAYAUD, ARE NOT EQUIVALENT TO A "STATISTICAL RISK" OR A "RISK TOLERANCE" AS SET FORTH IN THE CLAIMS

The Examiner alleges that Mayaud discloses the treatment of known drug allergies, which anticipates the present claims by disclosing a determination of a statistical risk.  However, there is no "statistical" treatment of this factor; that is, it is treated as a binary decision variable. "Statistical" is defined as:

(http://www.google.com/search?num=100&hl=en&lr=&safe=off&q=define%3Astatistical)

- of or relating to statistics; "statistical population"
  wordnet.princeton.edu/perl/webwn
- Statistics is the science and practice of developing knowledge through the use of empirical data expressed in quantitative form. It is based on statistical theory which is a branch of applied mathematics. Within statistical theory, randomness and uncertainty are modelled by probability theory. Because one aim of statistics is to produce the "best" information from available data, some authors consider statistics a branch of decision theory. ...
  en.wikipedia.org/wiki/Statistical
- A measure of the degree of spread among a set of values; a measure of the tendency of individual values to vary from the mean value. It is computed by subtracting the mean value from each value, squaring each of these differences, summing these results and dividing this sum by the number of values in order to obtain the arithmetic mean of these squares. 003
  appl.nasa.gov/resources/lexicon/terms_v.html
- Pertaining to or characterizing random phenomena, or referring to statistics.
  amsglossary.allenpress.com/glossary/browse
- maps use proportional symbols, pie charts, or histograms to visualize the quantitative aspects of the data. Typically, the statistical symbols are placed in each subdivision on the map, such as patrol areas, census tracts, neighborhoods, or wards. Such maps can be quite difficult to read if they contain a large amount of detail, particularly when many geographic subdivisions and several attributes of the information are being mapped. ...
  www.ncjrs.org/html/nij/mapping/ch1_12.html
- Examining data to interpret meaning, make generalisations and extrapolate trends. Often the data come in graphical form and because these data are expressed in the language of mathematics, they should be evaluated and interpreted by means of appropriate mathematical or statistical procedures.
  members.ozemail.com.au/~mghslib/subjects/society%20culture/Glossary.htm
- Is achieved when there is a low probability that the results of an experiment occurred by chance alone. In psychology it is conventional that results are said to be significant if the probability of their occurrence by chance is equal to or less than 5 per cent or 0.05
  psy.st-andrews.ac.uk/resources/glossary.shtml
- A collection and study of numerical data.
  www.state.mi.us/msp/cjic/ucr/ucr_m.htm

In fact, the Board is not obliged to accept these as formal definitions of the word "statistical"; it is, however, obliged in rendering its decision, to interpret the claim consistent with the specification and the accepted meaning to one of ordinary skill in the art at the time of the invention, which is believed reasonably conveyed by the above excerpts.

Likewise, with respect to claim 31, Mayaud does not disclose an input representing a "risk tolerance", since no degree of risk is assessed, and therefore no metric provided for determining a tolerance to that risk. That is, the system and method as disclosed in Mayaud provide no analysis of the importance or veracity of the allergy information provided, and indeed makes no decisions in dependence thereon, except that the input should be re-output to the user subsequently.

Even, assuming *arguendo*, if the allergy is to be treated as a "statistical" risk factor, it is not presented in a jointly optimized fashion with the economic parameters, as generally required by the claims. The rhetorical question posed by the present claims, and unanswered by Mayaud, is how can we compare or merge economic information and allergy information? Both the query itself, and any response, are both completely absent from Mayaud. The allergy information is an "orthogonal factor", presented according to an independent paradigm from economic information, and no attempt is made to reconcile or relate these types of information.

It is further noted that claim 44, in contrast to claim 29, requires that the statistical risk related to both the set of records and the determined user relevance parameter. Even assuming *arguendo* that the Examiner's rejection of claim 29 on this point is valid, this additional requirement is neither taught nor suggested by Mayaud.

Mayaud does not appear to present a sorted list having an order dependent on the determined economic parameters and the determined statistical risk, as required by claim 49. The Examiner addresses neither the issues of sorting nor ordering.

It is noted that, where the citation by the Examiner to an apparently irrelevant or clearly distinguished passage, no interpretation by applicant is required. By way of example, and without by way of limitation, the Examiner states that Col. 19, line 30 anticipates claim 62, which provides "The method according to claim 59 (an independent claim), further comprising the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance." Col. 19, lines 17-34, reads as follows:

Patient features bar 40 comprises a Select Patient button 46, a selected patient indicator 48, in this case Mary Harrington, a patient Problems button 50 and a patient Allergies button 52. Beneath Problems button 50 are displayed Mary Harrington's currently active problems 51 or conditions, shown here as pharyngitis and bronchitis. Beneath Allergies button 52 are displayed Mary Harrington's known allergies. Pressing or otherwise activating Problems button 50 or Allergies button 52 access the remote database for the patient's history and, opens a window or screen listing problems or allergies from which a physician, or other professional user, can select new problems or allergies to add to Mary Harrington's record, or delete ones that are no longer active. **Optionally, system-provided problem or allergy libraries may be organized into multiple lists with button 50 or 52, respectively, opening a list selection box as a preliminary to displaying a selected problem or allergy list.**

There is not believed to be any disclosure that a selection of one of a plurality of "relevance profiles" (if met at all by these problem or allergy libraries), are selected to define a "risk tolerance". Thus, the Examiner has apparently trivialized express claim language in order to shoehorn disparate disclosure to support an anticipation rejection.

CONCLUSION

It is therefore believed that the rejections of the Examiner should be reversed.

Respectfully submitted,


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29.     A method for presenting records to a user, comprising the steps of:

(a)     receiving an input from the user;

(b)     defining a subset of records selected from an electronic database containing a set of records, based on a classification of information within a respective record and the user input;

(c)     determining a statistical risk associated with a respective record;

(d)     determining economic parameters associated with the subset of records; and

(e)     presenting the subset of records automatically jointly optimized based on the determined economic parameters, and the statistical risk associated with the selected record.

30.     The method according to claim 29, wherein the user input comprises health information.

31.     The method according to claim 29, wherein the user input comprises a risk tolerance.

32.     The method according to claim 29, wherein a user interface is provided to assist the user in making selections.

33.     The method according to claim 32, wherein the economic parameters correspond to a cost associated with a respective selected record.

35.     The method according to claim 29, wherein the input comprises a semantic expression.

36.     The method according to claim 29, further comprising the steps of determining a user preference and further optimizing the presented set of records based on the determined user preference.

37.    The method according to claim 29, further comprising the steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records.

38.    The method according to claim 29, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

39.    The method according to claim 29, further comprising the step of transacting a sale relating to a subject of at least one presented set of records with the person.

40.    The method according to claim 39, wherein said sale comprises an electronic data transmission between a client system and a server system.

41.    The method according to claim 40, wherein the electronic data transmission between the client system and the server system is carried over the Internet.

42.    A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 29.

43.    The medium according to claim 42, further comprising the steps of generating a graphic user interface and interacting with the user through the graphic user interface.

44.    A method for presenting records to a user, comprising the steps of:
(a)    determining a user relevance parameter;
(b)    defining a set of records from an electronic database based on a classification of the information therewithin and the user relevance parameter;
(c)    determining a statistical risk relating to the set of records and the determined user relevance parameter;
(d)    determining economic parameters for defined records; and

(d)     presenting the set of records automatically optimized based on both the determined economic parameters and the determined statistical risk.

45.     The method according to claim 44, wherein the user relevance parameter comprises health information.

46.     The method according to claim 44, wherein the user relevance parameter comprises an input to a search engine.

47.     The method according to claim 44, wherein the records comprise information accessible through the Internet.

48.     The method according to claim 47, wherein the economic parameters correspond to a cost associated with a respective record.

49.     The method according to claim 44, wherein said presenting step comprises outputting a sorted list of the set of records having an order dependent on the determined economic parameters and the determined statistical risk.

50.     The method according to claim 44, wherein the user relevance parameter comprises a population grouping.

52.     The method according to claim 44, further comprising the steps of receiving feedback from the user relating to the presented set of records and re-optimizing the presented set of records to generate a revised presented set of records.

53.     The method according to claim 44, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

54.     The method according to claim 44, further comprising the step of transacting a sale of at least one presented set of records with the user.

55.     The method according to claim 54, wherein said sale comprises an electronic data transmission between a client system and a server system.

56.     The method according to claim 55, wherein the electronic data transmission between the client system and the server system is carried over the Internet.

57.     A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 44.

58.     The medium according to claim 57, further comprising the steps of generating a graphic user interface and interacting with the user through the graphic user interface.

59.     A method for outputting a set of records, comprising the steps of:

(a)     receiving a specification for a class of information having a plurality of records, said plurality of records having associated economic parameters;

(b)     determining a statistical risk associated with records within the class of information and the received specification; and

(c)     automatically jointly optimizing a presentation of the records based on both the economic parameters and the determined statistical risk.

60.     The method according to claim 59, wherein the presentation of the records is in the form of a proposal, and the optimization emphasizes a likelihood of adoption of the proposal by a user.

61.     The method according to claim 59, further comprising the steps of providing a plurality of optimization procedures and selecting at least one of the optimization procedures for optimizing a presented set of records for the user.

62.     The method according to claim 59, further comprising the steps of providing a plurality of relevance profiles, and selecting a relevance profile to define a risk tolerance.

63.     The method according to claim 59, further comprising the step of transacting a sale of at least one record with the user.

64.     The method according to claim 59, further comprising the steps of providing a client terminal having an interface for the user, providing a server for receiving information from the user and optimizing the presented records, and communicating between the client terminal and server over a computer network.

65.     A computer readable medium having recorded thereon a series of computer implemented instructions for controlling a computer to execute the method according to claim 59.

66.     The medium according to claim 65, further comprising the steps of generating a graphic user interface and interacting with the person through the graphic user interface.

67.     A method of producing a menu of selections, comprising the steps of:
(a)     receiving an inquiry from the user;
(b)     calculating a set of selections from a database responsive to the inquiry, each selection having an associated informational relevance to the inquiry, and at least one response having an associated economic parameter; and
(c)     automatically optimizing an economically efficient presentation of selections dependent on a joint analysis of the associated economic parameter and risk with respect to a likelihood of user adoption of a selection.

68.     The method according to claim 67, wherein the inquiry comprises a semantic expression.

69.     The method according to claim 67, wherein the economic parameter comprises a cost.

70.     The method according to claim 67, wherein the presentation gives preference to relevant and economically feasible results.

71.     The method according to claim 67, wherein the economic parameter perturbs an optimization purely according to risk with respect to a likelihood of user adoption, to reflect an interest of a third party.

72.     The method according to claim 67, wherein the automatic optimization merges results from a set of independent modules.

73.     The method according to claim 67, wherein the likelihood of user adoption is derived from a determination of objective statistically acceptable risk to the user.

74.     The method according to claim 32, wherein the economic parameters correspond to an economic interest of an entity distinct from the user.

(c)(1)(ix)  EVIDENCE APPENDIX

NONE

(C)(1)(X)  RELATED PROCEEDINGS APPENDIX


NONE